

ABSTRACT OF THE DISCLOSURE

A semiconductor memory device including: a memory cell having a gate electrode formed on a semiconductor layer via a gate insulating film, a channel region disposed below
5 the gate electrode, a diffusion region disposed on both sides of the channel region and having a conductive type opposite to that of the channel region, and memory functional units formed on both sides of the gate electrode and having a function of retaining charges; and an amplifier, the memory
10 cell and the amplifier being connected to each other so that an output of the memory cell is inputted to the amplifier.